



Date : August 20, 1985

Reply to Attn of : Construction Engineer (WPCTC)

DATE OF LETTER
 July 12, 1985

Subject: GS-11B-19067, Bid Package No. 3, Powerhouse Modifications, CIA Headquarters Expansion, Langley, Virginia

To :
 MCI Constructors, Inc.
 7649 Dynatech Court
 P.O. Box 2786
 Springfield, Virginia 22152

Gentlemen:

Your letter, dated above, submitting the following items for approval has been reviewed.

- Shop Drawings
- List of Materials
- Catalog Material
- Samples
-

The listed items, subject to contract requirements and comments, are returned:

- Approved
- Not Approved
- Approved as noted
- For Resubmittal as noted
-

MANUFACTURER AND DESCRIPTION	MFG. IDENTIFICATION	GSA NUMBER ASSIGNED
FD and ID Fan Operation and Maintenance Manuals	MCI Submittal No. 101	Approved

Sincerely,
 Gary D. Lee
 Construction Engineer

15616/30101



MCI CONSTRUCTORS, INC.

7649 Dynatech Court
Springfield, Virginia 22153

Address replies to:
P.O. Box 2786
Springfield, Virginia 22152

Telephone (703) 569-8010
TWX 710-831-0333 MCI ALE

CLIENT: Harris and Associates

PROJECT:

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SUBMITTAL DATE:

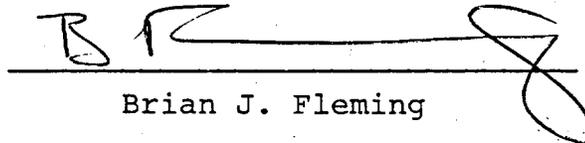
SUBMITTAL NUMBER:

SPEC. SECTION:

EQUIPMENT DESCRIPTION: Operation and Maintenance Manuals
F.D. and I.D. Fans

STATUS: Approved for submittal as clarified

C.Q.C. REPRESENTATIVE:



Brian J. Fleming

CLARIFICATIONS

1. This submittal applies to the operation and maintenance manuals for the forced and induced draft fans.
2. This manual is in accordance with Specification Section That is, the forced and induced draft fan section, General Mechanical Provisions and the Summary of Work, respectively.

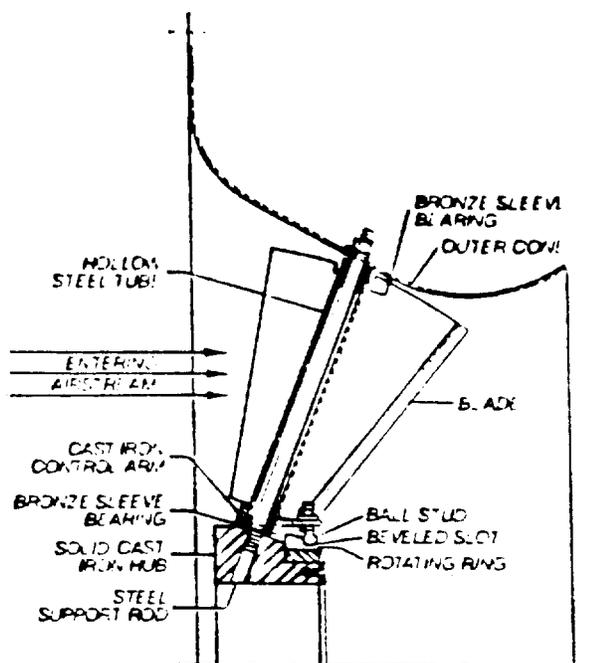
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T A B L E O F C O N T E N T S

<u>ITEM</u>	<u>DESCRIPTION</u>
1	Installation, Operation and Maintenance Instructions
2	Special Instructions for Inlet Valve Controls
3	Spare Parts List - F.D. Fans
4	Spare Parts List - I.D. Fans
5	Marathon Electric Certification Data - I.D. Fan
6	Outline 320S FR-TS-TEFC - Drawing No. A-SS29276
7	Electric Motor Data - I.D. Fan
8	Certification Data - F.D. Fan
9	Outline - TEFC Only 3205 FR-88-7S Drawing No. A-SS29277
10	Electric Motor Data - F.D. Fan
11	Performance Curve - F.D. Fan
12	Performance Curve - I.D. Fan
13	Circular Silencer Model CCB Drawing No. 5655/R1
14	F.D. Fans - Size 55 IE Fan Assembly ARR8 CW-DB
15	F.D. Fans - Size 55 IE Fan Assembly ARR8 CCW-DB
16	I.D. Fans - Size 402 Centrifugal Fan Assembly A/8 CW/UB 90% SW - Drawing No. RD-11-0-644
17	I.D. Fans - Size 402 Centrifugal Fan Assembly A/8 CCW/UB 90% SW - Drawing No. RD-11-0-645



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INLET VANE CONTROL is a nested vortex design. All components are located within the confines of the fan housing. The design utilizes heavy gauge blades. Each blade is welded to a hollow steel tube axle through which a solid steel support rod is housed. This rod provides a sturdy support between the outer cone and the cast iron center. Two bronze sleeve bearings are located within the hollow tube. Cast iron control arms with ball studs fit freely within the beveled slots of the rotating ring. The ball studs move with the rotating ring as it rotates around the center hub, causing the blades to open or close. The primary drive axle is linked to a solid steel torque shaft using a steel universal joint. This shaft penetrates the housing and is supported on a pedestal mounted flange ball bearing.

BEFORE OPERATING YOU MUST:

- 1) Check that IVC operates freely by hand, through the close-open-close cycle (Fan off.)
- 2) Set stops.
 - A. Adjust the "open" stop so that OPERATING CRANK only opens vanes 90° . Judge this angle by eye. (Some angular variation between individual vanes is inherent.)
 - B. Adjust the "closed" stop to limit OPERATING CRANK travel such that individual vanes just "kiss".
 - C. Then, if a DIDW fan, adjust length of ACTUATING LINK so that vanes on other IVC just "kiss" closed. The two IVC's are then synchronized.
 - D. LOCK STOPS (AND LINK)!! Repeat 1.

AFTER STARTUP:

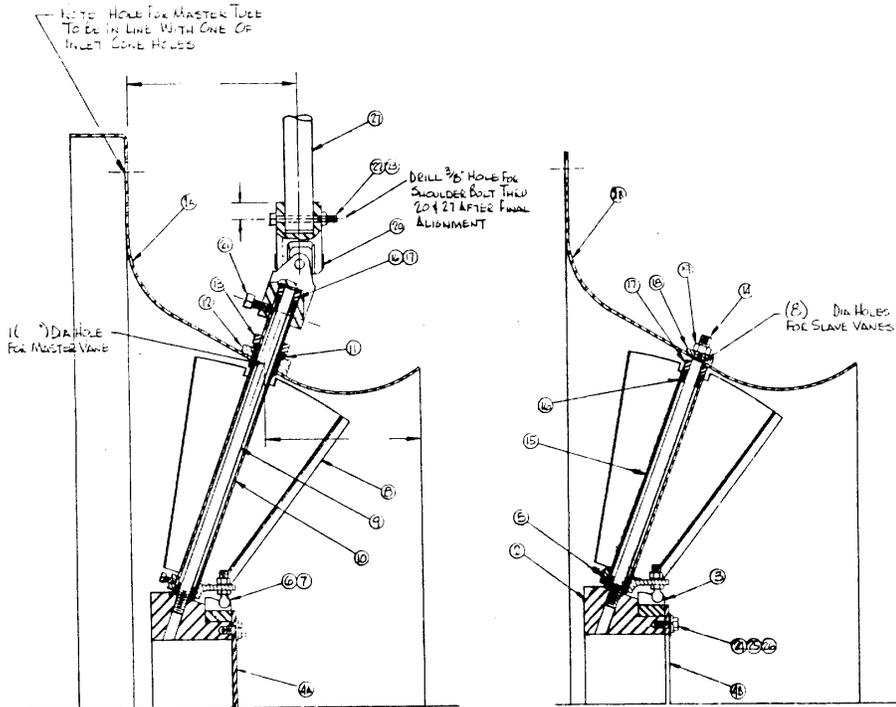
If manual control is used, adjust IVC for required air flow and hold position with quadrant locking bolt.

If automatic control is used, discard this bolt. Adjust controller linkage so no over-travel can occur. SERIOUS INTERNAL DAMAGE to IVC will result from over-travel.

If the fan is "under motored", amperage draw may be limited by setting the "OPEN" stop at something less than 90° . A tong ammeter will facilitate this setting.

MAINTENANCE

1. Check STOP adjustments periodically!
2. Lubricate external bearings at the same time as fan bearings.
3. No lubrication is required on internal parts, although they should be checked for wear, dirt build up and binding periodically.
4. Check that all fasteners are tight!



SECTION THRU MASTER VANE
SHOWING ARRANGEMENT I TYPE APPLICATION

SECTION THRU SLAVE VANE
SHOWING ARRANGEMENT S TYPE APPLICATION

AIR TECHNOLOGY INC.
 SUCCESSOR TO THE ASSETS OF CHAMPION BLOWER & FORGE, INC.
 MAILING: P. O. 72198
 100 W. CENTRAL AVENUE
 ROSELLE, ILLINOIS 60172
 (312) 529-2060

Purchaser to provide openings in building or structure of sufficient size to permit entrance of equipment parts as shown on this drawing.
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20	SET SCREW
21	INTERNAL JOURNAL BOLT
22	WASHER-LOCK
23	WASHER-FLAT
24	WASHER-LOCK
25	WASHER-FLAT
26	WASHER-LOCK
27	WASHER-FLAT
28	WASHER-LOCK
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97	WASHER-FLAT
98	WASHER-LOCK
99	WASHER-FLAT
100	WASHER-LOCK

SIZE 3/4 INLET VOLUME CONTROL ASSEMBLY

CHAMPION
 BLOWER & FORGE, INC.
 100 W. CENTRAL AVENUE
 ROSELLE, ILLINOIS 60172
 (312) 529-2060

REV. 4-2-78 NTS 40-9-2-

IVC Adjustments

Normal adjustment consists of setting the quadrant stops to prevent overtravel. Overtravel will result in damage to the control. The stops should be set so that the vanes will just kiss when closed and open approximately 95%.

If the ball studs come out of the rotating ring, it will be necessary to reset the ring. To reset the ring, loosen all of the crank arms with the IVC closed, rotate the ring until the ball studs are just about to come out of the ring in the closed position. Hold the ball stud tight against the rotating ring opposite to the direction of travel and tighten the crank arms. Check that the ball studs do not bottom out on the rotating ring when opening the IVC. The ball stud is at its lowest position when the IVC is about $\frac{1}{2}$ open. If the ball stud bottoms out, raise the crank arm on the vane tube so that it just clears the ring.

If it becomes necessary to replace a vane busing or crank arm, care must be taken when tightening the rod nut. If it is over-tightened it will deform the cone and can cause wheel cone interference.

No lubrication is required on the rotating ring. If it becomes stiff it should be cleaned with a solvent. The use of oil or grease will attract a graphite or dry teflon lubricant may be used.